Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Structural equation modelling of COVID-19 knowledge and attitude as determinants of preventive practices among university students in Ghana

Richard Twum Ampofo*, Eric Nimako Aidoo

[1] Department of Statistics & Actuarial Science, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

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ABSTRACT

Coronavirus disease (COVID-19) has distorted the economic development activities of many countries across continents. This undesirable tragedy has highly affected the educational system, which majorly contributes to the wellbeing of an individual and the economy as a whole. The study aims to explore the determinants of COVID-19 preventive practices among students considering their knowledge about COVID-19 and attitudes toward the disease. The data for the study were collected through an online questionnaire survey involving university students. The relationship between students' knowledge, attitude and their preventive practices towards COVID-19 were investigated using structural equation modelling. The results indicated that most students demonstrated substantial knowledge on COVID-19, moderate to strongly agree attitude towards COVID-19, and sometimes practiced COVID-19 preventive and safety protocols. In addition, a positive relationship between knowledge and attitudes towards COVID-19 was established. Also, a positive effect was established for students' knowledge about COVID-19 and preventive practices, whilst an adverse effect was confirmed for attitudes towards COVID-19 and practices to avoid spreading the COVID-19 disease.

Introduction

Coronavirus disease 2019 (COVID-19) is the world's current greatest problem. The spread of COVID-19 began in Wuhan, a city in China and has currently been transmitted to almost all countries worldwide [1]. COVID-19 affected persons show symptoms of dry cough, short breath, myalgia, fatigue and fever, with an advance stage characterized by septic shock, respiratory distress syndrome, bleeding and coagulation dysfunction [2]. The effect of the virus has posed a psychological threat to daily human activities following the declaration of the disease as a public health emergency of international concern and a pandemic on January 30, 2020, and March 11, 2020, respectively [3,4]. This global crisis has forced countries to implement

* Corresponding Author
E-mail address: richierichard72@yahoo.com (R.T. Ampofo).

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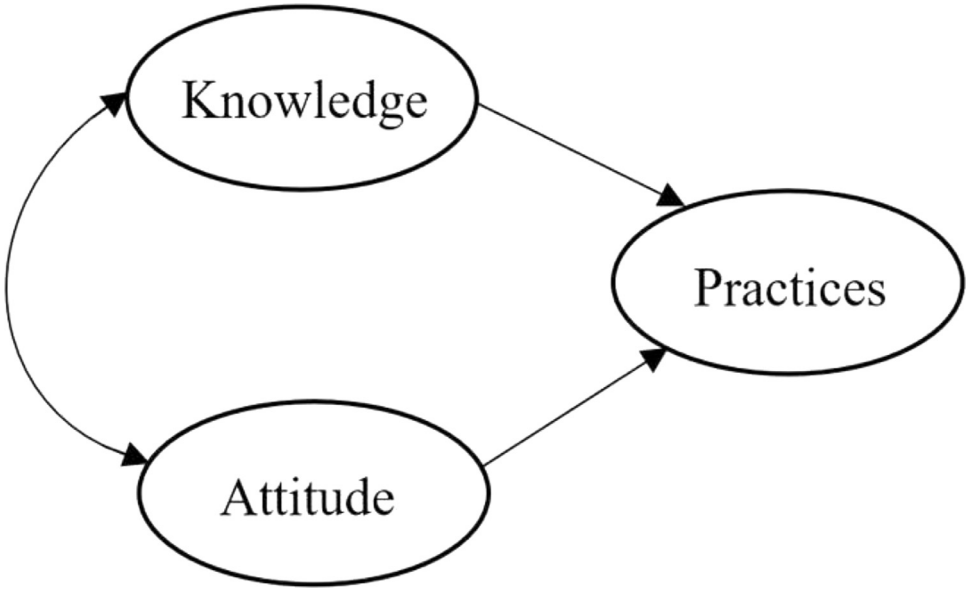

Figure 1. Conceptual model developed to describe the relationship between COVID-19 knowledge, attitude and practices among university students.

different strategies to reduce the rate of transmission and produce vaccines to provide immunity against the disease [5,6]. The pandemic has posed several challenges on human lives following the introduction of preventive measures such as national quarantines and stay at home measures which have led to largely unknown mental health implications concerning people's living environment, especially in big cities [7,8].

A total of over 266 million confirmed cases of COVID-19 and about 5.3 million deaths have been reported as of November 29, 2021 [9]. Currently, many vaccines have been produced and distributed across countries to curb the transmission rate of coronavirus disease. However, the battle against COVID-19 exists in most countries where people are exposed to the threats of this dangerous disease. Although territories like Marshall Island, Solomon Island, Saint Helena and a few more have recovered all active cases from COVID-19 infection, most countries are experiencing different waves of the COVID-19 pandemic [9]. Recently, different variants of the COVID-19 virus have also been discovered in many countries, thereby creating fear and panic among people worldwide.

The education system is one of the most affected sectors in the COVID-19 pandemic era owing to the large number of students who visit educational facilities to obtain training. Due to crowding and close contact situations, initiatives taken by governments directed schools to shut down totally because of the increasing numbers of confirmed cases reported each day. The situation led most educational institutions to move academic activities online to reduce face-to-face sessions as part of the interventions [10]. However, this shift in the educational system has resulted in different challenges to students, including lack of access to online learning aids such as computers, and stable internet accessibilities, thereby making online learning a challenging task during this period [11]. Due to these challenges, most educational institutions have resumed face-to-face class sessions with imposed governments restrictions on COVID-19 safety protocols.

To enhance a safe and continuous academic life in schools, it is essential to assess students' understanding and state of mind that affect their preventive practices against the coronavirus disease. Several studies [12–15] have been conducted to assess the knowledge, attitudes and practices (KAP) among students. Other studies [10,16,17] have also focused on the challenges, and the negative psychological impact students encounter in the COVID-19 pandemic. Research findings from these studies could be used for decision making and policy implementation. However, studies from specific countries may be necessary due to the diversification of culture and behavioural differences among students from different geographical locations.

This study seeks to determine whether the practices performed by students to avoid COVID-19 infection are influenced by their knowledge and attitudes using structural equation modelling (SEM) techniques. The conceptual model developed in the study exhibits the importance of knowledge and attitude as predictors of practices (Figure 1). The model is used to test the following hypothesis:

H1: Knowledge about COVID-19 and attitudes are related.
H2: Knowledge about COVID-19 influences preventive practices.
H3: Attitude towards COVID-19 influences preventive practices.

Materials and methods

Survey design

The data used in this study were obtained through a questionnaire survey. The questionnaire is a modified version of the instrument used by [18] to assess COVID-19 related KAP among tertiary students. The questionnaire consisted of 41 questions and was divided into four sections: demographics (6 questions), knowledge (17 questions), attitude (6 questions), and practices (12 questions). Under the COVID-19 knowledge section, optional answers of "yes", "no", or "don't know" were provided to the respondents. These answers restrained participants from selecting the correct answer by chance. Under the attitude section, participants were asked to rate a 5 point Likert scale questions ranging from strongly disagree to strongly agree. Also, participants were asked to choose from options of "always", "sometimes", and "never" practiced in the practices section. A pilot survey involving 50 participants was conducted in the early stages of the study to assess the validity of the questionnaire and revise where necessary. The responses from the pilot survey were not included in the analysis.

Participants and data collection

The participants involved in the survey were university students (i.e. both undergraduates and postgraduates) in Ghana. The study was limited to students at Kwame Nkrumah University of Science and Technology (KNUST). KNUST is the second largest public university in Ghana and is well known for quality research and higher education. The questionnaire was self-administered through an online survey system (Google Forms) which lasted for 10 days between 16th to 25th October 2021. The students were targeted through social media class groups including WhatsApp and Telegram which is commonly used by them in the university. A message comprising of the objectives and importance of the survey, a link to the questionnaire and a consent to fill the questions were sent to almost all social media platforms of student groups. Participants were encouraged to recommend the link to other coursemates and friends in the university. A total of 1075 students responded to the questionnaire.

Structural equation model

Structural equation modelling (SEM) is a widely used multivariate technique for investigating the direct and indirect effect of relationships between observed and latent variables. In SEM, an observed variable is a variable that has been directly measured and contributes to the composition of a latent variable. On the other hand, latent variables are unobserved variables that cannot be measured directly. The theory of SEM simplifies complex relationships between variables by utilizing a path model or analysis for explaining effects resulting from observed and latent variables [19,20]. The technique clearly determines the relationship between cause-and-effect variables. The SEM aims to generalize a confirmatory factor analysis (CFA) model to assess the relationship between latent variables and how they affect each other in many ways. The SEM summarises a linear structural relationship into a measurement model (CFA model) and structural model [21]. The measurement model is defined as:

$$x_1 = \Lambda_1 \eta + \varepsilon_1 \tag{1}$$

$$x_2 = \Lambda_2 \xi + \varepsilon_2 \tag{2}$$

where $x_1(r \times 1)$ and $x_2(s \times 1)$ are random vectors of the observed variables that explains endogenous (dependent) η and exogenous (independent) ξ latent variables, $\Lambda_1(r \times q_1)$ and $\Lambda_2(s \times q_2)$ are loading matrices, and $\varepsilon_1(r \times 1)$, and $\varepsilon_2(s \times 1)$ are random vectors of measurement errors. The measurement model can also be expressed in matrix form as:

$$y = \begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} \Lambda_1 & 0 \\ 0 & \Lambda_2 \end{pmatrix} \begin{pmatrix} \eta \\ \xi \end{pmatrix} + \begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \end{pmatrix} \tag{3}$$

On the other hand, the structural model can be defined as:

$$\eta = B\eta + \Gamma\xi + \delta \tag{4}$$

where $B(q_1 \times q_2)$ and $\Gamma(q_1 \times q_2)$ are unknown matrices of regression coefficients that describes the cause-and-effect relationship between η and ξ, and $\delta(q_1 \times 1)$ is a random vector of residuals or error of endogenous variables. Thus, the SEM is expressed as a CFA model whose latent factors represent a linear structural equation. The model aids in finding a direct and indirect effect among variables and the measurement errors. Statistically, SEM depicts an extended form of a generalized linear model like the multiple regression model and analysis of variance [20,22].

The performance of the measurement and structural model was evaluated using root mean square error approximation (RMSEA), comparative fit index (CFI), tucker-lewis index (TLI), goodness of fit index (GFI), and adjusted goodness of fit index (AGFI). The RMSEA, CFI, and TLI can be expressed as [23]:

$$RMSEA = \sqrt{\frac{\max(\chi_k^2 - df_k,\ 0)}{df_k(N-1)}} \tag{6}$$

Table 1
Demographic characteristics of the students

Characteristics	Item	Frequency (%)
Gender	Male	657 (61.12)
	Female	418 (38.88)
Age	$\leq$ 20 years	384 (35.72)
	$>$ 20 years	691 (64.28)
Level of study	Undergraduate	1018 (94.70)
	Postgraduate	57 (5.30)
Study mode	Regular	913 (84.93)
	Distance Learning (IDL)	162 (15.07)
College	College of Science	354 (32.93)
	College of Humanities and Social Sciences	232 (21.58)
	College of Engineering	220 (20.47)
	College of Health Sciences	107 (9.95)
	College of Arts and Built Environment	106 (9.86)
	College of Agriculture and Natural Resources	56 (5.22)
Current residency type	Off-campus accommodation	722 (67.16)
	On-campus accommodation	353 (32.84)

$$CFI = \frac{\max(\chi_0^2 - df_0,\, 0) - \max(\chi_k^2 - df_k,\, 0)}{\max(\chi_0^2 - df_0,\, 0)} \tag{7}$$

$$TLI = \frac{\chi_0^2/df_0 - \chi_k^2/df_k}{\chi_0^2/df - 1} \tag{8}$$

where (χ_0^2, df_0) and (χ_k^2, df_k) represent the chi-square test statistic for the baseline model and fitted model, respectively, with their corresponding degrees of freedom. Also the GFI and AGFI are given as [24]:

$$GFI = 1 - \frac{tr\left[W^{-1/2}\left(S - \hat{\Sigma}\right)W^{-1/2}\right]}{tr\left(W^{-1/2}SW^{-1/2}\right)^2} \tag{9}$$

$$AGFI = 1 - \left[\frac{k(k+1)(1-GFI)}{2df_k}\right] \tag{10}$$

where W is a weight matrix condition on the method of model parameter estimation, tr is the trace or addition of diagonal elements contained in the matrix, $\hat{\Sigma}$ is the covariance matrix of the observed variables in the restricted model, S is the unrestricted sample covariance matrix relating to the saturated model, and k represents the number of observed variables.

Results

The demographic profile of the students involved in the study shows participation of 61% males and 39% females (Table 1). About two-thirds of the students who participated in the study were more than 20 years. Most of the students were studying in regular mode and 67% resided in accommodations outside the university campus. In addition, almost 40% of the students were pursuing science related academic programmes whilst 5% of them were pursuing agricultural and natural resources related programmes.

The frequencies and percentages distribution of correctly answered questions in the knowledge section among students are displayed in Table 2. About 90% of the students demonstrated a good understanding of what causes COVID-19, symptoms and knowledge about early treatment of COVID-19 patients as an effective step to help patients recover as well as avoid further transmission. A little over half of the students (55%) correctly answered questions on knowledge about the spread of COVID-19 through buried deceased COVID-19 patients. Also, 47% of the students knew that COVID-19 does not only spread through surfaces of materials. Correct answers on COVID-19, symptoms, handling of deceased, transmission and knowledge on preventive measures have been supported in existing literature [1,25-31].

About 40% of the students were highly concerned about COVID-19 confirmed cases and 42% were anxious about government's call to reduce the rate of transmission in the communities (Table 3). A little over 49% of the students believe that COVID-19 infected persons who isolate themselves show a responsibility in preventing the transmission of COVID-19. In addition, 39% of the students were scared and worried with 19% expressing extreme fear about the total number of COVID-19 cases reported globally each day.

The characteristics of the preventive practices against COVID-19 is presented in Table 4. It was observed that majority of the students (73%) always wear nose mask while 54% sometimes implemented social distancing protocols in crowded

Table 2
Knowledge characteristics of COVID-19 among students (n = 1075)

Item	Description	Frequency of correct responses (%)
K1	COVID-19 is a disease caused by coronavirus	Yes 942 (87.63)
K2	The symptoms of COVID-19 are fever, fatigue, dry cough, headache and body pains	Yes 963 (89.58)
K3	Some people with COVID-19 are asymptomatic (show no symptoms)	Yes 852 (79.26)
K4	Not everyone with COVID-19 has an increasingly severe condition, except the elderly	Yes 681 (63.35)
K5	COVID-19 infected patients with chronic diseases such as diabetes, heart disease, and obesity have an increasingly severe condition	Yes 897 (83.44)
K6	Children and teenagers do not need to make efforts to prevent COVID-19 infection because they have a strong immune system	No 783 (72.84)
K7	People with a strong immune system will not get infected with COVID-19	No 740 (68.84)
K8	People who are asymptomatic to COVID-19 (People without symptoms) cannot infect the virus to others	No 814 (75.72)
K9	COVID-19 is spread through the respiratory droplets of people infected with COVID-19	Yes 898 (83.54)
K10	The dead bodies of people with COVID-19 who have not been buried can be a source of the spread of the COVID-19 virus	Yes 782 (72.74)
K11	The buried dead bodies of people with COVID-19 can be a source of the spread of the COVID-19	No 591 (54.98)
K12	COVID-19 only spreads through surfaces of materials	No 502 (46.70)
K13	The transmission of the COVID-19 virus can be prevented by not touching the face	Yes 781 (72.65)
K14	To prevent COVID-19 infection, we must avoid going to crowded places like markets, churches, schools as well as avoid using public transportation	Yes 858 (79.81)
K15	Avoid travelling to regional cities and other countries can prevent the spread of COVID-19	Yes 773 (71.91)
K16	Isolation and treatment of COVID-19 patients are effective ways to reduce the spread of the virus	Yes 955 (88.84)
K17	The treatment of early symptoms and intensive care can help people with COVID-19 to recover	Yes 950 (88.37)

Table 3
Listings of students' attitude towards COVID-19

Item	Description	Frequency (%)				
		Strongly Disagree	Disagree	Moderate	Agree	Strongly Agree
A1	Keeping up with the information regarding the number of COVID-19 cases is important for the community	68(6.32)	35(3.26)	135(12.56)	403(37.49)	434(40.37)
A2	Keeping up with the information regarding the government's call for COVID-19 preventive efforts is important for the community	39(3.63)	45(4.18)	119(11.07)	416(38.70)	456(42.42)
A3	After knowing the information on the number of cases of COVID-19, I felt worried/scared	64(5.95)	70(6.51)	307(28.56)	425(39.54)	209(19.44)
A4	All people with COVID-19 are those who violate the government's call in the efforts to prevent transmission of COVID-19	290(26.98)	361(33.58)	203(18.88)	161(14.98)	60(5.58)
A5	People with COVID-19 should not be stigmatized in the society	56(5.21)	23(2.14)	87(8.09)	244(22.70)	665(61.86)
A6	People with COVID-19 who isolate themselves show that they have a responsibility in preventing the transmission of COVID-19	39(3.63)	19(1.77)	102(9.49)	384(35.72)	531(49.39)

places. Also, 24% of the student always educate other people on COVID-19 preventive measures. About 35 – 43% of the students implemented basic COVID-19 safety protocols such as washing of hands with soap under running water, using of hand sanitizers and observing social distancing protocols.

The diagonally weighted least square (DWLS) estimator was used in the estimation of the factor loading of the SEM parameters since all observed variables considered in the study were categorically scaled. The DWLS yields more accurate factor loading estimates than maximum likelihood estimation with such data [32]. Table 5 shows the estimated factor loadings of the initial model and final model achieved. In the initial stage, the estimated model exhibited a poor fit as the RMSEA = 0.067, CFI = 0.846, and TLI = 0.836 were below their respective cut-off points (Table 6). Hence, there was a need for model improvement by implementing the theory of trimming in modifying the initial model. This method helps in eliminating variables that are non-significant and contribute poorly to the fitness of the initial model developed. The observed variables K6, K7, K8, K10, K11, K12, A3, A4 and P1 were excluded in the determination of the final model due to low and

Table 4
Variable list and response on COVID-19 preventive practices

Item	Description	Frequency (%)		
		Never	Sometimes	Always
P1	In the last 3 days, did you worn a mask when you were in a crowded place	35(3.26)	253(23.54)	787 (73.20)
P2	In the last 3 days, were you implementing physical distancing when you were in the crowd	118(10.98)	583(54.23)	374(34.79)
P3	In the last 3 days, were you using hand sanitizer when you were in crowded places	161(14.98)	501(46.60)	413(38.418)
P4	In the last 3 days, were you washing your hands with soap after going to a crowded place	132(12.28)	485(45.12)	458(42.60)
P5	In the last 3 days, were you immediately changing your clothes before entering the house and having contact with family members/ roommates	413(38.42)	473(44.00)	189(17.58)
P6	As a college student, I have been educating people around me with the knowledge of the preventive measures of COVID-19	202(18.79)	611(56.84)	262(24.37)
P7	In the last 3 days, I have eaten vegetables and fruit.	166(15.44)	637(59.26)	272(25.30)
P8	In the last 3 days, I have had enough rest.	159(14.79)	575(53.49)	341(31.72)
P9	In the last 3 days, I have been exercising routinely.	297(27.63)	565(52.56)	213(19.81)
P10	In the last 3 days, I have taken vitamins or supplements to boost my immunity.	371(34.51)	474(44.09)	230(21.40)
P11	In the last 3 days, I have been cleaning up my house more frequently.	110(10.23)	540(50.23)	425(39.54)
P12	In the last 3 days, I have been cleaning my door handles and object surfaces with sanitizer.	470(43.72)	426(39.63)	179(16.65)

Table. 5
Descriptive statistics of the measurement variables

Latent Constructs	Item	Mean	SD	Variance	Factor loading	
					Initial	Final
Knowledge:	K1	0.876	0.283	0.080	0.513	0.505
	K2	0.896	0.237	0.056	0.637	0.656
	K3	0.793	0.348	0.121	0.515	0.510
	K4	0.634	0.453	0.205	0.344	0.369
	K5	0.834	0.295	0.087	0.608	0.637
	K6	0.728	0.423	0.179	0.311	*Dropped*
	K7	0.688	0.447	0.200	0.260	*Dropped*
	K8	0.757	0.410	0.168	0.297	*Dropped*
	K9	0.835	0.279	0.078	0.658	0.656
	K10	0.727	0.410	0.168	0.393	*Dropped*
	K11	0.550	0.494	0.244	0.128	*Dropped*
	K12	0.467	0.470	0.221	0.338	*Dropped*
	K13	0.727	0.391	0.153	0.481	0.517
	K14	0.798	0.329	0.108	0.573	0.591
	K15	0.719	0.399	0.159	0.462	0.492
	K16	0.888	0.239	0.057	0.649	0.655
	K17	0.884	0.230	0.053	0.694	0.683
Attitude:	A1	4.023	1.022	1.044	0.388	0.573
	A2	4.121	0.873	0.762	0.499	0.765
	A3	3.600	1.057	1.117	0.009	*Dropped*
	A4	2.386	1.052	1.106	-0.466	*Dropped*
	A5	4.339	0.997	0.995	0.357	0.476
	A6	4.255	0.893	0.797	0.368	0.553
Practices:	P1	2.7000	0.479	0.229	0.410	*Dropped*
	P2	2.238	0.477	0.228	0.657	0.637
	P3	2.234	0.498	0.248	0.694	0.676
	P4	2.303	0.469	0.220	0.720	0.698
	P5	1.792	0.613	0.376	0.522	0.559
	P6	2.056	0.519	0.269	0.610	0.616
	P7	2.099	0.518	0.268	0.572	0.576
	P8	2.169	0.600	0.360	0.420	0.418
	P9	1.922	0.594	0.353	0.497	0.526
	P10	1.869	0.639	0.408	0.498	0.532
	P11	2.293	0.451	0.203	0.713	0.697
	P12	1.729	0.615	0.378	0.537	0.586

Table 6
Fitness Indices of the initial and final model

Fit indices	RMSEA	CFI	TLI	GFI	AGFI
Initial model	0.067	0.846	0.836	0.993	0.991
Final model	0.053	0.931	0.924	0.996	0.995
Accepted value	< 0.06[a]	≥ 0.900[b]	≥ 0.900[c]	> 0.900[c]	> 0.800[d]
Remarks on final model	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory

[a] Hu & Bentler [42]
[b] Hair et al. [43]
[c] Thakkar [44]
[d] Gefen et al. [45]

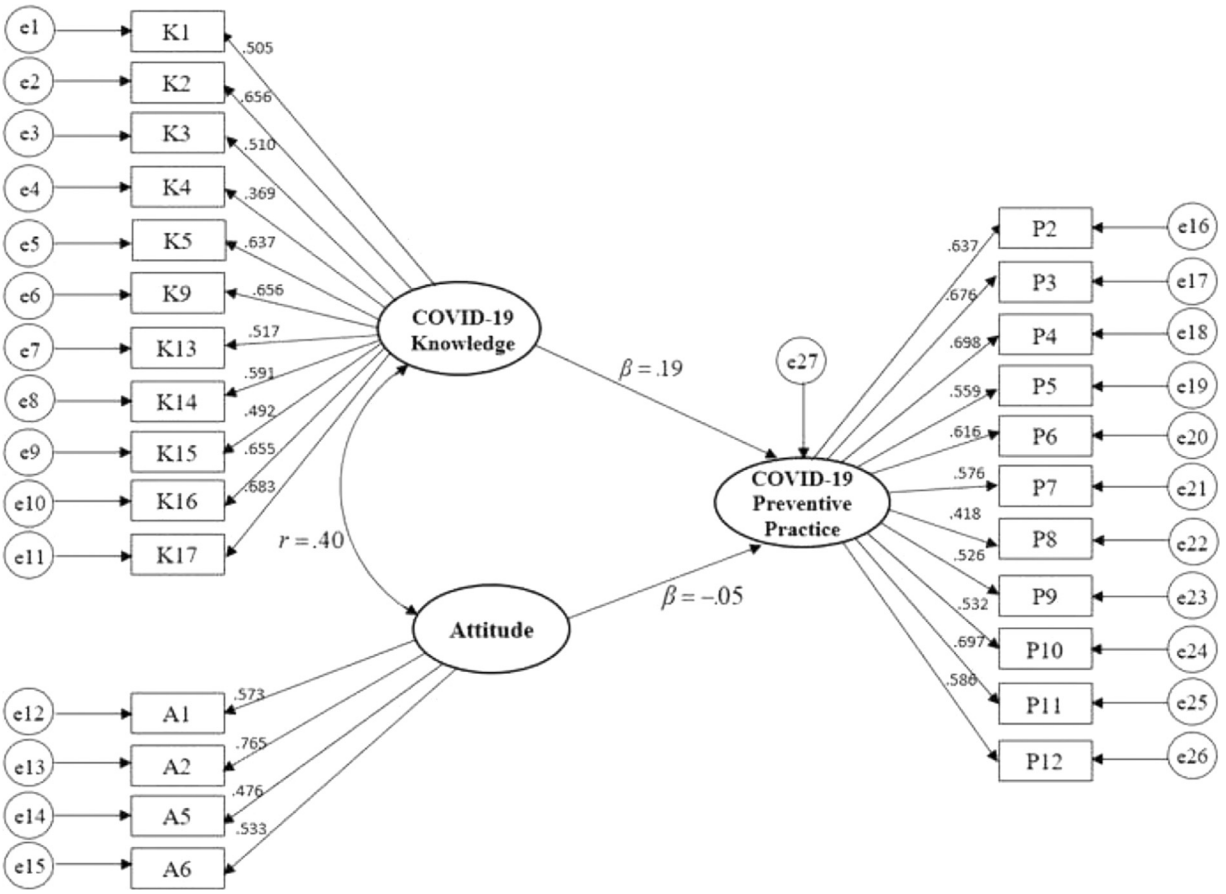

Figure 2. Structure model showing the relationship between student's knowledge, attitude and preventive practices towards COVID-19.

Table 7
Summary of hypothesis testing

Hypothesis	Standard estimate	p-value	Decision
H1: Knowledge ↔ Attitude	0.404	<0.001	Significant
H2: Practices ← Knowledge	0.192	<0.001	Significant
H3: Practices ← Attitude	-0.046	0.007	Significant

non-significant factor loadings in the initial model generated. The final model selected was found to be acceptable as the fit indices meet the minimum criteria (Table 6). From the developed model (Figure 2 and Table 7), there exist a significant positive relationship between knowledge and attitudes that students exhibit towards COVID-19 ($r = 0.404$; $p < 0.001$), explaining the hypothesis (H1). The second hypothesis H2 initiates a claim that knowledge about COVID-19 affects preventive practices. A significant positive effect ($\beta = 0.192$; $p < 0.001$) was established for H2, whiles there existed a significant negative effect ($\beta = -0.046$; $p = 0.007$) between attitude and safety practices that prevents coronavirus disease (H3).

Discussion

The COVID-19 pandemic impact have posed a major distortion on the daily life activities of individuals worldwide. This has significantly change the way of living among persons and has extremely affected the education sector which majorly contributes to the development and wellbeing of an individual. The diversion of normal life activities combined with fear of a deadly and highly transmissible disease, poor performance of economies, and an uncertain future have kept many anxious about the consequences of the COVID-19 pandemic [33,34].

In this study, the effect of knowledge and attitude on COVID-19 preventive practices among university students in Ghana was explored. Also, the relationship between knowledge and attitude was tested. Findings from this study revealed that most students strongly believed that achieving knowledge and well informed updates on number of reported cases of COVID-19 as well as information about COVID-19 preventive efforts are very relevant to living in their various communities.

With the exception of students having little knowledge about handling of COVID-19 deceased person, they exhibited substantial understanding of the causes of COVID-19, symptoms an infected person is likely to show, conditions of infected children and elderly, information on transmission and transmissibility as well as preventive practices and knowledge about asymptomatic persons. According to [35], addressing student knowledge and understanding of the disease should have been the starting point prior to returning to school. This will also allow them to give better information (i.e. it will reduce the myth) about the disease to others who are ignorant of it. [36] also argued that individuals access to information about a particular health issue influences the level of knowledge. The study found a significant positive impact of knowledge on COVID-19 preventive practices among students. Thus, student's preventive practices turn to get better if they have substantial knowledge about the disease. This results is consistent with the findings in existing studies [36,37]. Thus, lack of knowledge is likely to contribute to the high risk and easy spread of the disease.

In relation to student's attitude towards COVID-19, many of them were against the view that the infected persons were those who violated government's efforts in the implementation of policies to prevent the transmission of COVID-19. However, a little over 5% were in favour of stigmatization of COVID-19 infected and recovered persons. The act of stigmatization can psychologically affect the wellbeing of COVID-19 affected persons in their surroundings. This can also lead to further transmission of the virus and subsequent death since infected persons who show symptoms would avoid visiting healthcare facilities for disease treatment [38]. Contrary to positive relationship between knowledge and preventive practices, a significant negative relationship was found between student's attitudes and COVID-19 preventive practices. That is, the more an individual's attitude towards COVID-19 improves, he or she is less likely to implement COVID-19 preventive practices. This result contradict the findings in the existing studies [14,39] which revealed that attitude towards COVID-19 has a positive impact on preventive practices. These differences may be influenced by the concept of optimistic bias which occurs when an individual felt shielded against risk. This type of relationship may also demand further investigation.

Knowledge about COVID-19 and attitude towards the disease were positively correlated. This indicates that students' attitude may improve on the basis of having a good understanding of their environment and information they receive about the disease. This type of relationship is reciprocal; thus, being knowledgeable about the disease can improve an individual's attitude towards it. This result is in agreement with the findings in existing literature [39–41]. However, irrespective of student's awareness and eagerness to acquire information about COVID-19, more than 50% of the students expressed fear and anxiety from daily reported cases of COVID-19. This indicates the importance of policy makers to implement interventions to support students and the general public during this crisis.

Conclusion

From the study, students are likely to exhibit good preventive practices when knowledgeable about COVID-19. Thus, the rate of disseminating information on COVID-19 should be intensified particularly those dealing with safety protocols. Because lack of knowledge on the disease constitute the major obstacle to preventive practices. Educating students and the general public on the need to implement safety protocols at all times may help to minimised the risk of infection and spread. Such education can also help to explain the myth the public have on the disease.

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Ethical approval

The study was approved (document no. CHRPE/AP/491/21) on 15th October 2021 by the Committee for Human Research, Publications and Ethics (CHRPE) of the School of Medicine and Dentistry at the Kwame Nkrumah University of Science and Technology. The committee assessed whether the study was in accordance with ethical standards.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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